

AMENDMENTS TO THE CLAIMS:

1. (currently amended) A method of screening for biologically active agents that modulate a cancer associated phosphatase function, the method comprising:

combining a candidate biologically active agent with any one of:

(a) a polypeptide encoded by ~~SEQ ID NOS: 1, 3, 5, 7, 9 or 11~~ SEQ ID NO:1; or having the amino acid sequence set forth in ~~SEQ ID NOS: 2, 4, 6, 8, 10 or 12~~ SEQ ID NO:2, wherein said polypeptide has phosphatase activity;

~~(b) a cell comprising a nucleic acid encoding a polypeptide encoded by SEQ ID NOS: 1, 3, 5, 7, 9 or 11; or~~

~~(c) a non human transgenic animal model for cancer associated phosphatase gene function comprising one of: (i) a knockout of a gene corresponding to SEQ ID NOS: 1, 3, 5, 7, 9 or 11; (ii) an exogenous and stably transmitted mammalian gene sequence comprising polypeptide encoded by SEQ ID NOS: 1, 3, 5, 7, 9 or 11;~~

and determining the effect of said agent on phosphatase function; and

assessing the effectiveness of said agent on cancer cells *in vitro* to identify agents that modulate said phosphatase function.

2. (withdrawn) A method for the diagnosis of cancer, the method comprising:
determining the upregulation of expression in SEQ ID NOS: 1, 3, 5, 7, 9 or 11 in said cancer.

3 – 6 (canceled)

7. (withdrawn) A method for inhibiting the growth of a cancer cell. the method comprising:

downregulating activity of the polypeptide encoded by SEQ ID NOS: 1, 3, 5, 7, 9 or 11; or having the amino acid sequence set forth in SEQ ID NOS: 2, 4, 6, 8, 10 or 12; in said cancer cell.

8 – 11. (canceled)

12. (withdrawn) A method of screening for targets of a cancer associated phosphatase, wherein said targets are associated with signal transduction in cancer cells, the method comprising:

comparing the pattern of gene expression or protein phosphorylation in a normal cell, and in a tumor cell characterized by up-regulation of SEQ ID NOS: 1, 3, 5, 7, 9 or 11.

13-14. (canceled)

15. (withdrawn) The method according to claim 12, wherein said signal transduction involves activation MKPX, PTP4A1, PTPN7, FEM-2, DKFZP566K0524 or FLJ20313.

16. (withdrawn) An isolated nucleic acid comprising the sequence set forth in SEQ ID NOS: 1, 3, 5, 7, 9 or 11.

17. (withdrawn) A method to treat a tumor comprising administering a therapeutic amount of a composition comprising:

a compound of the general formula $\alpha(P_z)$, wherein $\alpha(P_z)$ is one or more moieties which specifically binds to a human protein MKPX, PTP4A1, PTPN7, FEM-2, DKFZP566K0524 or FLJ20313, wherein the binding of $\alpha(P_z)$ alters the function of the human protein $\alpha(P_z)$ or wherein $\alpha(P_z)$ comprises one or more cytotoxic moieties;

and a pharmaceutically acceptable carrier;

18 – 27 (canceled)

28. (withdrawn) A compound for the treatment of a tumor of the general formula $\alpha(P_z)$, wherein $\alpha(P_z)$ is one or more moieties which specifically binds to human MKPX, PTP4A1, PTPN7, FEM-2, DKFZP566K0524 or FLJ20313 protein, and alters the function of the protein or comprises one or more cytotoxic moieties.

29-42 (canceled)

43. (withdrawn) A method for visualizing a tumor in a patient, the method comprising:

(a) administering to a patient an effective amount of a composition comprising:

a compound of the general formula $\alpha(P_z)I$, wherein $\alpha(P_z)$ is one or more moieties which specifically binds to a human MKPX, PTP4A1, PTPN7, FEM-2, DKFZP566K0524 or FLJ20313 protein, and I is one or more imaging moieties; and a pharmaceutically acceptable carrier; and
(b) visualizing the imaging moieties of the compound.

44-59. (canceled)